



Sanitary and Hygienic Features of Working Conditions in Poultry Factories and Farms

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Abstract: Due to the non-optimization of technological processes in workplaces of poultry factories and farms, various gases and biological substances and a large amount of dust appear in the atmosphere. Such factors can negatively affect the health of workers working in poultry factories and farms and cause various diseases.

Key words: toxic gases, dust, bacteria, viruses.

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Relevance : Working conditions in poultry factories are inextricably linked with the originality of the structure of the enterprise building, the method of keeping poultry, the degree of mechanization of the main and auxiliary technologies used in their care, climate, geographical conditions, and the season. When designing and building poultry houses, it is necessary to take into account the age of the bird and the direction of the economy, as well as the climatic characteristics of the area. At the same time, three types of buildings are possible: pavilion, block and multi-storey .

Industrial type poultry farms are characterized by a certain level of physical pressure on the organs of movement support and sensory organs.

The work of operator-operators and auxiliary workers in the hatchery shop (egg sorting, lighting, placement, disinfection, picking into cages, sorting of hatched chicks and room equipment, inventory cleaning) requires a high level of physical load, because all work is done manually. One operator moves 3.5 tons of cargo in one shift when placing eggs in the incubator. In addition, the egg and chick sorter monitors 2,000 chicks for 8-10 hours.

In most cases, workers work in adapted, half-dark rooms in white coats and white backgrounds, which causes fatigue to the organs of vision and the whole organism. Especially in the chicken care workshop, a large amount of physical labor is performed, personally caring for them for 10-15 days. This is manifested in the fact that the workers' stature is in a forced working position for a long time, in the position of bending down or raising the hand when caring for birds in cages.

Physical, nervous-emotional pressure is noted in the average condition during the maintenance of mother birds and industrial groups and performance of operator tasks. Doing such work requires 36% to 53% walking, and one worker travels up to 5 km.

When keeping poultry on the ground, the physical pressure on workers increases, the number of manual operations increases, that is, physiologically, they bend the body from 100 to 150 times, they go from stall to stall, they walk up to 8 km in one shift. Conveyor operation in poultry slaughterhouse is done manually. This position is performed by bending the body forward several times in a forced standing or sitting position.

At a high speed of the conveyor (7.5 m/min), numerous and uniform worker movements and a short duration of the work process (2-3 seconds) lead to monotony of the work, straining the organs of vision and making it difficult to concentrate.

Physiological changes in the dynamics of the organism, the results of the study of the nature of the work process lead to the conclusion that:

the work of the workers working in the feed shop and egg warehouse belongs to the category of heavy physical and medium-intensity work;

the work of an incubator shop operator and a poultry keeping shop operator kept in cage batteries is of medium intensity and intensity;

the work of slaughterhouse workers is classified as medium-heavy and high-intensity;

Non-mechanized poultry houses and poultry houses are classified as labor-intensive and medium-intensive.

The work of the workers of the poultry rearing workshop belongs to class 3.1, according to the working condition of the body, it belongs to class 3.1-3.2. The work of the feed store poultry operator is considered to be level 2 "harmful" and level 1 "harmful" in terms of intensity.

Workers who take care of poultry in poultry farms stay for a long time (6-8 hours) in a building where poultry are kept in certain microclimatic conditions according to zootechnical requirements.

The role of microclimate is that human life activities take place normally in the conditions of normal temperature homeostasis. In the environment of cooling and heating effects of microclimate, homeostasis is maintained as a result of cardiovascular, respiratory, endocrine organs, salt-water, and protein metabolism. These determine the physiological function of the body, and the disruption of these functions increases the harmful effects of various physical and chemical factors. On the basis of these conditions, the negative effects of noise, vibration, and chemicals increase. Under the influence of an unfavorable microclimate, the functional state of the organism deteriorates, work capacity decreases, and the level of morbidity increases.

For the first 10 days, the temperature in the chick care shop should be 35-36 °C, then 26-20 °C, room temperature 28-18°C, relative humidity 55-57%, air movement speed 0.8 m/s.

But the microclimate in poultry factories does not always meet sanitary and hygienic requirements.

In the main production incubators and slaughterhouses, the temperature increases (28-35°C) and the relative humidity is 78-90% in the hot and cold seasons of the year. In the cold season of the year, the temperature in the building where chicks are kept rises to 27.6-34.2°C. In the hot season, the temperature changes and is 16.2-35.4°C, the relative humidity is 49-98%, the air speed is 0.85 m/s. 3-14°C) is stored. In this season, the relative humidity ranges from 40 to 86% and the wind speed is up to 2.0 m/s.

In the cold season of poultry keeping in ground conditions, the temperature in the building is 7-14°C, the relative humidity is up to 75%, the air speed is 0.9-1.0 m/s. In the hot season of the year, the room temperature is from 21 to 29°C, the relative humidity is from 50 to 60%, and the air speed is 1.1-1.9 m/s.

In addition, most heated poultry houses have uneven horizontal temperature patterns due to non-uniform heat distribution.

The air of buildings where poultry is kept is polluted with gases, in particular, ammonia, hydrogen sulphite, intestinal gases, carbon II oxide. These gases arise from the life activity of poultry, decomposition of organic matter (feed, bedding, feathers, poultry litter). The amount of gases that appear in the air of buildings depends on the age of the birds, their storage conditions and the capacity of the air exchanger.

In addition, the mandatory use of chemicals (formalin, formaldehyde, chlorophos, various alkalis, acids) in poultry farms causes additional gases to appear in the air. The amount of gases in the air of buildings where chicks, egg-laying birds and poultry for meat are kept is determined in accordance with zootechnical requirements in the following amounts: ammonia-10 mg/m³, hydrogen sulphite 5 mg/m³, carbon dioxide 0.2%.

In the first 10 days in the rooms where chicks are kept, it ranges from 0.7 to 10.7 mg/m³ in winter and 1.7 to 23.7 mg/m³ in summer. Ammonia was determined in the amount of 8.2 mg/m³ in rooms where hens are cared for (keeping birds in cage batteries) and 16.7-27.3 mg/m³ in the ground method.

Low levels of hydrogen sulphite (up to 4.5 mg/m³) in the air of the building were found during daily mechanized cleaning of poultry waste.

Carbon dioxide, fatty acids, mercaptans, sulfites, indal, scotal, aerol-2 appear in the air of buildings where poultry are kept.

The air of the hatchery workshop contains formaldehyde (0.2-8.7 mg/m³) and in some cases mercury vapors appear in the air due to technical malfunctions of the equipment used in poultry care.

The amount of dust that appears in workplaces of poultry factories depends on the age of the birds and the conditions of storage. A high level of dust in workplaces can be caused by the ineffectiveness of air exchangers and the improvement of poultry care technology (manual feeding of birds, poor cleaning of rooms). The amount of dust in the air of the chick care shop in the first 10 days is 5-15.5 mg/m³, in the rooms where hens are fed, in the 60-70 days the amount of dust in the air is 12.6-44 mg/m³, in the cage batteries 3.0-48.2 is mg/m³. The amount of dust in the rooms where chicks are kept in some poultry factories was 2.8-10 mg/m³ in the first ten days and 29.0-30 mg/m³ in 60-70 days. The amount of dust in hens and broilers was 6.0-58.2 mg/m³.

During the sorting of chicks in the hatchery workshop, dust around the respiratory organs of the workers is in the amount of 6.0-49.0 mg/m³.

In the conducted scientific research, it was found that the amount of dust in the air of the incubator workshop was 6-9 to 34-38 mg/m³. It was found that the average amount of dust in the main workshops of poultry farms was 12-46 mg/m³. The highest amount of dust around the respiratory organs of the workers was dry occurs during feed distribution and poultry sorting. Despite the presence of a common air exchange system and deflectors, the amount of dust in the dry feed preparation shop is 1.5-20.3 times the allowed norm, and in the workplace of the poultry operator it is 1.9-5.2 times more. the amount of dust in the workshop reaches 273-680 mg/m³. In poultry houses, dust consists of organic matter (feathers, waste) and plants.

In poultry factories, organic dust consists of 3-6% clechatka, up to 70% wet organic, 7-10% extraction ether, feathers, pieces of chicken waste, fungi, microorganisms, combikorma dust, feed additives. Dust contains biologically active substances: vaccines, vitamins, biovitamin concentrates, enzymes, antibiotics, hormones.

The composition of organic dust consists of carbon II oxide. Dust particles can contain bacteria, fungi, and insects, and they appear in large quantities. According to the results of scientific research, the amount of allergens, taking into account the protein content, is set at 0.1 mg/m³.

In conclusion, it should be noted that despite the improvement of production technology in poultry factories (transition from ground care to the cage method) and the use of technological equipment based on the needs of the times (cell batteries), they are subject to physical and neuro-emotional pressure, mixed dust, biologically active substances, microbes in the workplace . , the formation of chemical compounds leads to various diseases.

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